



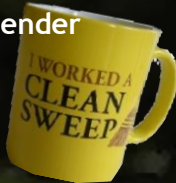
Communicator

May 2012

The Contest Contender

It's A Clean Sweep!

Tech Talk
Fuses



Plus

Meeting Minutes

President's Report

QRM

News You Can Lose

May Calendar

SEPARS Report

ve7sar.net



Bhim Sen Nair VA7BIM prepares to launch
(story page 11)



The Monthly Newsletter of the Surrey Amateur Radio Club



**SURREY
AMATEUR RADIO CLUB**

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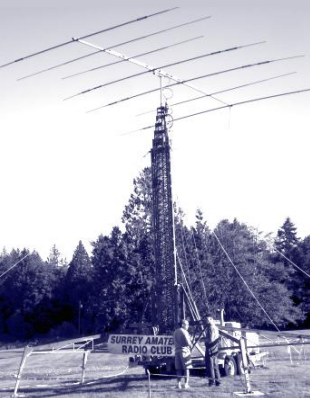
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VIA THE WEB
www.ve7sar.net

The **SARC Communicator** is published monthly for members of the Surrey Amateur Radio Club.

SARC maintains a website at www.ve7sar.net that includes club history, meetings, news and other information.



April Meeting Minutes

Susan Eshelman VE7IIE—SARC Secretary

GENERAL MEETING OF SARC

APRIL 11, 2012

The meeting was convened at 7:00 p.m. by President John Brodie VA7XB.

INTRODUCTION & WELCOME

John VA7XB welcomed guests and new members, and an attendance list was circulated.

FINANCIAL REPORT

Treasurer Scott Hawrelak VE7HA provided a brief financial report. He reminded members that one more order for SARC name badges will go out this year.

There was a discussion of the need to purchase a set of Band Pass Filters for the club. They're currently needed for the Training/Contesting

group, and would be a good addition to Field Day equipment. The proposal is that we buy a filter for each of six bands, at a cost of \$690 USD plus shipping, for a total of approximately \$750 USD. A motion to approve the purchase was made by Scott Hawrelak VE7HA, seconded by Kelvin Hall VA7KPH, and carried unanimously.

FIELD DAY PLANNING

The Langley club's first choice of a site for this year's Field Day has now been eliminated as an option, so we will again pursue the Grandview Heights site used last year. Surrey Fire is pursuing it on SARC's behalf.

FOXHUNT

Anton James VE7SSD gave a report on the upcoming Foxhunt, scheduled for May 12th.

CLUB EXECUTIVE 2011-2012

PRESIDENT

John Brodie VA7XB

VICE PRESIDENT

Bill Gipps VE7XS

SECRETARY

Susan Eshelman VE7IIE

TREASURER

Scott Hawrelak VE7HA

DIRECTORS

Kelvin Hall VA7KPH
(SEPARS)

John Schouten VE7TI
(Communicator Editor
& Net Manager)

George Merchant
VE7QH (Repeaters)

Bill Little VA7ZBL
(Membership)

Brett Garrett VE7GM

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May Calendar
President's Report

	SEPARS Net	SARC Net
1 st Tuesday	Drew VA7DRW Jay VE7OFH Standby	Drew VA7DRW
2 nd Tuesday	Dixie VA7DIX Alan VA7BIT Standby	Jinty VA7JMK
3 rd Tuesday	Rob VE7CZV	John VA7XB
4 th Tuesday	Bill VE7XS Dixie VA7DIX Standby	Anton VE7SSD
5 th Tuesday	Jinty VA7JMK	Bill VE7XS
Want a turn at Net Control? Contact the Net Manager ve7ti @ separs.net		

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, (optional Tone Squelch 110.9) also accessible on IRLP node 1980 and Echo-link node 496228. On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 Coming soon, a repeater at 224.000MHz (-1.6MHz).

He gave a rundown on how the Foxhunt works, and how it's beneficial in developing VHF skills. Participants can learn how to homebrew directional antennas. This is also a social event, so whether participating in the Foxhunt or not, all members and spouses are welcome.

SEPAR

Kelvin VA7KPH gave a brief update on SEPAR activities, noting that the organization now has a beautiful new website -- separ.shutterfly.com -- courtesy of John Schouten VE7TI.

REPEATER

John VA7XB advised that Repeater installation has now been scheduled for May, and Dan Barnscher has the contractor lined up.

OPERATOR TRAINING/CONTESTING GROUP

Fred Orsetti VE7IO gave a report on the successes being enjoyed by members of the Operator Training group being led by he and Jim Smith VE7FO. In late March, participants enjoyed the WX SSB contest. Nine participants racked up 2.2 million points. While there was some confusion with CQ regarding the operating category VE7IO's station was under in the contest, all was straightened out successfully. The next training session will coincide with the late April Ontario QSO Party, which will be held simultaneously with an RTTY event. SARC members will work both contests that weekend.

ELMERS TEAM

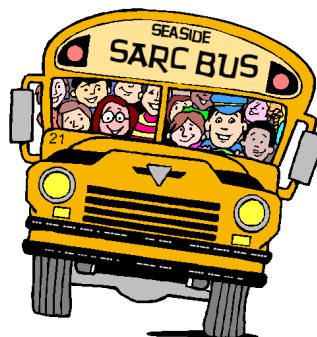
John VA7XB reported that a new effort is underway to provide assistance to new club members on station set-up and other areas where new hams typically require an assist. He along with several members, including Brett Garrett VE7GM, Kelvin VA7KPH and John VE7TI are now actively serving as Elmers.

TOWER TRAILER MAINTENANCE

John VA7XB and Gord Kirk VA7GK recently conducted a maintenance inspection of the big tower trailer, and discovered that the two propane bottles appear to have been stolen. A member suggested he may have one to donate, and will look into it.

SEASIDE BUS TRIP

Susan VE7IE gave a report on the Seaside Oregon hamfest trip, June 1st-2nd, noting that there had been a good show of preliminary interest, but few registrations thus far. As of this date, our two selected hotels offering Sea-Pac discounts both have adequate vacancies, but members should not delay in booking a room. Saturday evening meal options were discussed. Susan pointed members to the webpage, which is now facilitating online registrations. The 10% early-bird discounts will run to April 18th, then the trip will be opened up to other local clubs.



FEATURE PRESENTATION

Susan VE7IE introduced the evening's technical presenter, John White VA7JW. John gave part two of a very informative talk on the nature of the Sun, its interaction with the ionosphere, and solar events that affect propagation. In appreciation of his willingness to do back-to-back presentations for SARC, both excellent, John VA7XB gifted a bottle of spirits to VA7JW, with the Club's thanks.

With no New Business, following the 50/50 draw, the meeting was adjourned at 9:00 p.m. The next meeting will be held on May 9th, 2012.

DOWN THE LOG...

SARC Monthly Meetings

2nd Wednesday (Sept-Jun)
1900 hrs local at the Emergency Management BC PREOC,
14275 96th Avenue, Surrey, BC

Weekly Club Breakfast

Friday at 0830 local
ABC Country Restaurant at
600 - 7380 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hrs local
on 147.360 MHz (+) Tone=110.9

SEPARS Net

Tuesday at 19:30 hrs local
on 147.360 MHz (+) Tone=110.9

Announcements & News

SEPARS Monthly Workshop
Third Thursday, 1900-2130 local
Rm. 214, 13569 - 76th Avenue,
Surrey.

SEPARS Training

Fourth Saturday, 0830 local,
Firehall #1, 88 & 132nd Street,
Surrey

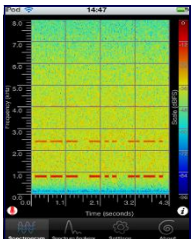
On the Web ve7sar.net

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements may also be found on our web page.

Twitter [@ve7sar](https://twitter.com/ve7sar)

More Tech Adding An External Mic To Your iDevice

Thanks to Robin G7VKQ There is now a method to get an external mic to work with an iPod or iPhone device. He refers to blackcatsystems.com/ipad/iPad_iPhone_iPod_Touch_Microphone_Wiring.html which shows that a resistor to ground is needed to make the device recognize the external mic is in place. There are a couple of ways to make the connection work (shown below).



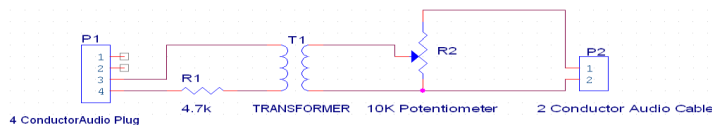
When used with the Spectrum View app from Oxford Wave Research you are able to connect a receiver to an iPod device and record QRSS3 and CW transmissions. While it is possible to set your iPhone or iPad next to the radio's speaker or headphones, this is often less than ideal, due to the problem of picking up external sounds.

There are apparently no commercially available cables to let you connect a line level audio source to the microphone jack of an iPhone/iPad/iPod Touch, so here is one you can build.

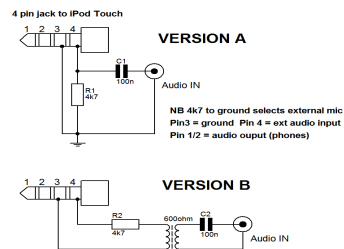
Here's what you need:

- 2.5 mm 4 conductor phone plug, such as the 171-7425-E from Mouser
- 4.7k resistor
- 10K potentiometer
- 600 ohm transformer, such as the 42TL016-RC from Mouser
- Audio cable to plug into your radio, usually with a 2.5 mm mono plug

Here is the wiring diagram:



iPod Touch 4g External Mic Interfaces
Rev A 16.3.12 G3XBM



Connections to iPod at owner's risk!

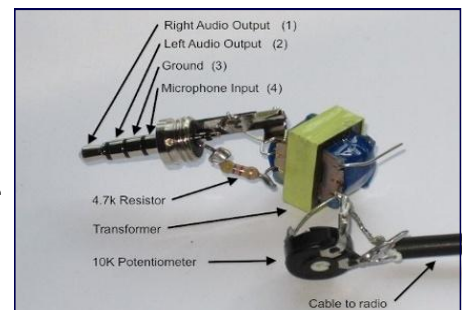
The iDevice needs to see a resistance in the neighborhood of 5k between the microphone conductor and ground. That tells it that a microphone has been plugged in. If it is a direct short, it thinks a headphone was plugged in. Open circuit means nothing was plugged in. The exact value is not

important, from experimenting it appears that 4.7k seems to work. This resistor is put in series with the isolation transformer.

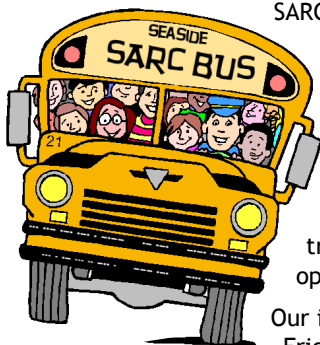
The other side of the isolation transformer goes to the cable that plugs into the radio, through a 10K potentiometer, which serves to adjust the input level as needed. Again, the 10K value was chosen from experimentation.

While there are 4 conductor audio plugs with an attached cable that could be used, to neaten things up, they all seem to put the shield on conductor 4, which makes sense for most applications where that is ground. For the iDevices, that is the microphone line, and as a result, rather than shielding the signal, you get extra noise pickup.

As always, be careful with your wiring, double check everything, and check that the schematic and drawing above actually make sense. Any damage due to wiring errors, including in our drawings, is your responsibility.



SEA-PAC 2012 BUS TRIP



SARC is sponsoring a bus trip to this year's Sea-Pac Hamfest in Seaside, Oregon. SARC members, family and friends and will be transported by luxury coach for this great two-day holiday to one of the most beautiful oceanside spots in the Northwest. Traveling as a group not only makes the trip more affordable, it gives us a great opportunity to relax and socialize.

Our itinerary is for a 7 a.m. departure on Friday, June 1st, leaving from pick-up spots in Surrey and possibly additional locations, depending on demand. We'll arrive in Seaside mid-afternoon for hotel check-in, with time to relax before the Sea-Pac spaghetti dinner.

Sea-Pac offers a full slate of events on Saturday, from seminars to the famous Flea Market. Visit their website for details: www.seapac.org. While hams are attending seminars, swap meet, etc., family members (kids welcome) can enjoy a coach tour of local sights in nearby Cannon Beach and Astoria, enjoy the beach and tax-free shopping in picturesque Seaside. After dinner in town or the Sea-Pac banquet, the group will leave later evening and arrive back in Surrey early Sunday morning.

SARC's package price includes transportation and registration for Sea-Pac events. Sea-Pac has arranged discounts with local hotels, and you'll need to make your own hotel booking. Please don't delay in making hotel reservations, as rooms sell-out very quickly for Hamfest each year.

Book your spot on the trip today by going to SARC's website at www.ve7sar.net, choosing your registration options and arranging payment by credit card or PayPal.



SURREY AMATEUR RADIO CLUB 2012 RDF Foxhunt

**Saturday May 12, 2012 at
Crescent Park, South Surrey**

**Registration & Instructions 0800 - 0900
Foxhunt commences at 0900 with barbeque at 1200**

To participate, you need a 2 m handheld radio. However, if you are a beginner, or don't have a radio, then come anyhow! You can be part of a more experienced team or we may have some spare equipment that you can use.

Talk-in 147.360+ (110.9 tone)

FOXHUNT – NO CHARGE; BARBEQUE \$10

All are welcome, but we ask that you RSVP Anton James VE7SSD
jamesadf@shaw.ca and indicate if you plan to attend foxhunt or BBQ or both

To get there, take Crescent Rd. west from King George Highway near Hwy 99,
& turn off at 129th St. to parking & assembly area





The Contest Contender

Fred Orsetti VE7IO & Jim Smith VE7FO

Contest Training

We have geared up for the Florida QSO Party on April 28–29th, our 11th training session. Operator progress has been very good and we now have operators who can sit down and jump right into the running mode.

As we go through the various contests there are some high points and some not so high but generally everyone is enjoying the experience and feeling much more in control while sitting in the chair.

One such highlight was the ARRL SSB Sweep Stakes contest back in November of 2011 when our team



accomplished a "Clean Sweep." The contest is somewhat unique in that each station may only be contacted once and the number of different recognized locations is limited to the 80 ARRL and RAC sections. Working the 80 sections is called a 'Clean Sweep' and allows the station to claim one of the coveted Clean Sweep coffee mugs and claim the mugs we did.

There was just 45 minutes left in the contest and we had one section to work, I believe it was Rhode Island W1XX, and we logged him at 0225 UTC.

As this was a significant achievement, Jim and I decided that we would apply for "Clean Sweep" mugs for all the operators, eight in total they were:

Don VA7GL



Marcy VE7JT



Walter VE7SM



John VA7XB



Jay VE7OFH



Brett VE7GM



Jim VE7FO and Fred VE7IO



The log was accepted and the mugs arrived in early April. The presentation of these prestigious awards will be done at the SEPAR AGM and the SARC regular monthly meeting in May 2012.

After the FIQP we will be taking most of May off due to travel and other commitments however on June 9th we will be cranking up, the big tower, and operating in the ARRL June VHF QSO Party. Then on June 16 we will be on the air for the All Asian DX Contest, CW which will be our run up to Field Day.

On a personal note the contest training sessions have been something I have very much enjoyed. In addition to being fun, the shack at VE7IO has some notable improvements which will serve well as we go into the next contest season in the fall.

My thanks to all who continue to make this project fun and educational for everyone.

~ Fred VE7IO

Contest Calendar

Here are some other early May contests should you wish to participate:

Ten-Ten Spring CW Contest--CW, from May 5, 0001Z to May 6, 2359Z. Bands (MHz): 28. Exchange: Call sign, name, 10-10 number, state. Logs due: 15 days. [Rules](#)

7th Area QSO Party--Phone, CW, Digital, from May 5, 1300Z to May 6, 0700Z. Bands (MHz): 1.8-28, 50, 144, Frequencies: CW--40 kHz above band edge; SSB--1.845, 3.855, 7.235, 14.255, 21.355, 28.455. Exchange: RS(T)+S/P or 7th-area county code. Logs due: Jun 2. [Rules](#)

Indiana QSO Party--Phone,CW, from May 5, 1600Z to May 6, 0400Z. Bands (MHz): 1.8-28. Frequencies: CW--1.805 and 40 kHz above the band edge on 80-10 meters, SSB--1.845, 3.820, 7.190, 14.250, 21.300, 28.400. Exchange: RS(T) + S/P or IN county, DX RS(T) only. Logs due: Jun 15. [Rules](#)

Radio Club of America QSO Party--Phone, from May 5, 1700Z to May 6, 0459Z. Bands (MHz): 3.5-21. Exchange: RS, QTH, name, equipment. [Rules](#)

ARI International DX Contest--Phone,CW,Digital, from May 5, 2000Z to May 6, 1959Z. Bands (MHz): 1.8-28. Exchange: RS(T), serial or Italian province. Logs due: 30 days. [Rules](#)

New England QSO Party--Phone,CW,Digital, from May 5, 2000Z to May 6, 0500Z and May 8, 1300Z to May 8, 2400Z.

Multiple operating periods. Bands (MHz): 3.5-28. Frequencies: CW--3.540, 7.035, 14.040, 21.040, 28.040; SSB--3.850, 7.180/280, 14.280, 21.380, 28.380. Exchange:

RS(T) and S/P or New England county. Logs due: 30 days. [Rules](#)

ARS Spartan Sprint--CW, from May 8, 0200Z to May 8, 0400Z. Bands (MHz): 3.5-28. Frequencies: Monthly on the first Monday evening local time. Exchange: RST, S/P/C, and power. Logs due: 2 days. [Rules](#)

OK1WC Memorial Contest--Phone,CW, from May 8, 1600Z to May 8, 1659Z, first through fourth Monday of each month. Bands (MHz): 3.5, 50, 144, Frequencies: see website for bands. Exchange: RS(T) and serial. Logs due: 7 days. [Rules](#)

7th Area QSO Party--Phone,CW,Digital, from May 5, 1300Z to May 6, 0700Z. Bands (MHz): 1.8-28, 50, 144, Frequencies: CW--40 kHz above band edge; SSB--1.845, 3.855, 7.235, 14.255, 21.355, 28.455. Exchange: RS(T)+S/P or 7th-area county code. Logs due: Jun 2. [Rules](#)

Indiana QSO Party--Phone,CW, from May 5, 1600Z to May 6, 0400Z. Bands (MHz): 1.8-28. Frequencies: CW--1.805 and 40 kHz above the band edge on 80-10 meters, SSB--1.845, 3.820, 7.190, 14.250, 21.300, 28.400.. Exchange: RS(T) + S/P or IN county, DX RS(T) only. Logs due: Jun 15. [Rules](#)

Hyack Needs You (and your radio)

The New Westminster Hyack International Parade is on Saturday, May 26. Operators assigned to the assembly area and parade officials will start communications at 08:00 and those assigned to points along the parade route will start a little later. The event starts at 10:30 with the Vancouver Police Motorcycle Drill Team and the parade follows. It is usually all done by around 13:00 hrs.

There is a need for about 25 operators at this event. Assignments will include such things as assembly area, judging, shuttle buses, police, shadowing various Hyack and parade officials, P.A. announcer, dispersal etc. The parade committee also counts on us for communication at many of the intersections along the parade route and would appreciate any help we can provide with the actual manning of the traffic barricades.

As always, new hams are very welcome. No experience is necessary; we can certainly buddy up any brand new hams with an experienced operator. All that is required is a handheld, (and hopefully a spare battery!)

Contact Ken Clarke at kenjclarke@shaw.ca or at telephone: 604-816-5775 (cell)

NOTICE OF SARC ANNUAL GENERAL MEETING

The Surrey Amateur Radio Club will be holding its Annual General Meeting on Wednesday, June 13, 2012 at 7pm at the Emergency Management BC SW Regional Office situated at 14275--96th Avenue, Surrey, BC

Please attend this meeting and assist us to plan the direction of our club for the coming year.



SEPARS Report Kelvin Hall VA7KPH



SEPAR Activities

On April 11, 2012 SEAPR participated in an Emergency Operations Centre (EOC) Exercise with the City of Surrey BC at Fire hall #1. This was a test of the City's response protocol for an actual event.

On April 14, 2012, seven SEPAR members ventured to the Communications Academy, South Seattle Community College for a day of emergency response presentations and viewing of emergency communications equipment and vehicles.

On April 19, 2012, Jim Smith VE7FO, hosted a NTS Message Handling workshop to refresh our message handling capabilities and to take them to the next level.

On April 26, 2012, SEPAR had the Annual General Meeting and election of Executive.

The executive is as follows:

- President - Kelvin Hall VA7KPH
- Vice President - Alan Saunders VA7BIT
- Secretary - Rod Tondevold VE7RTZ
- Treasurer - Paulette Schouten VE7VPE
- Director - Ron Casey VE7VTA
- Director - Brett Garrett VE7GM
- Director - Don Hamilton VE7GL
- Director - John Schouten VE7TI
- Director - Pat Speer VE7PJS

On April 28, 2012 SEPAR participated in a Emergency Social Service (ESS) Exercise with the City of Surrey ESS group. This exercise was based upon a train derailment and no telephone lines or cell phone connections. SEPAR became the eyes and ears for the Reception Centre (photos below—additional photos on the SEPARS shutterfly album).

SEPAR Events Calendar

separ.shutterfly.com - Click on the Calendar tab

May 5, 2012 - Saturday - Guilford Library workshop - Contact Marcy Lui VE7JT or Fred Orsetti VE7IO for more information

SEPAR Meetings

Third Thursday of each month starting at 1900 hrs

Fourth Saturday of each month starting at 0900 hrs

Location and event schedule can be located at separ.shutterfly.com click on the calendar tab

Internet sites for Emergencies

Emergency Management BC formerly Provincial Emergency Program (PEP) pep.bc.ca/index.html

Latest Earthquakes in the World





Tech Talk John Schouten VE7TI

All About Fuses



In today's electronics, fuses play a very important role that is frequently misunderstood, with the result that expensive equipment is often not fully protected, and this can result in expensive repair bills. The history of fuses is as old as the use of electricity and probably goes back to the time of the first short circuit! At first, fuses were simple open-wire affairs, but around 1890 Edison enclosed the wire into a lamp base to make the first enclosed fuse. By 1904 the Underwriters Laboratories had introduced specifications covering fuse size and ratings to meet the safety standards of the period. In 1927 Littelfuse started making the first of their range of low amperage fuses for the budding electronics industry. Since that time many new types of fuses have appeared on the market, some with very special characteristics for particular types of protection. Today the choice is extremely large and protection can be provided inexpensively and the risk of expensive repair bills reduced.

Purpose of a Fuse

A fuse is a device which is wired into an electrical circuit to prevent excessive current flowing when a fault occurs. On overload the wire forming the fuse element will heat up and melt ('blow') thereby breaking the circuit, interrupting current flow, preventing damage from excessive current to the remaining circuits. It is the electrical equivalent of a "safety valve".

The most important characteristic to the user is the current rating which, unfortunately, is often misunderstood. The current rating of a fuse is established by the manufacturer after a series of tests under controlled conditions. This enables the manufacturer to publish a set of specifications for its product which design engineers can use to decide which is the correct type of fuse for a particular circuit. In order to understand the current rating of a given fuse it is important to know the conditions under which this rating was achieved. There are three main groups of fuses:

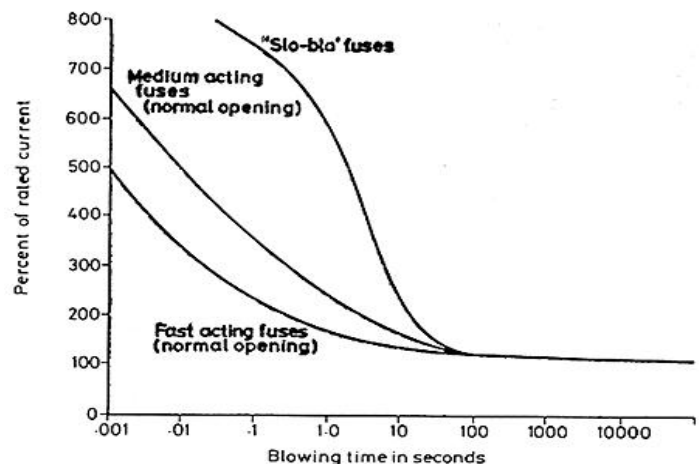
- slow-blow (or anti-surge),
- normal quick acting, and
- very fast acting

There is also a fourth type known as time delay fuses.

Each of these types will protect a circuit from excessive continuous current, but act very differently under surge or short time conditions. The fitting of the wrong type

could mean no protection at all is being provided, or fuses that keep "blowing" for no apparent reason.

Let's take a detailed look at each type. The blowing time in seconds plotted against percentage overload for the three main types of fuse mentioned above is shown.



It can be seen that up to 100 per cent overload there is very little difference between the three types. But if we take a current overload of say 500 per cent we can see that the fast acting fuse blows in 0.001 seconds (a millisecond) and the slow-blow in about 2 seconds with the normal acting fuse at about 0.01 seconds. Quite a considerable difference between the three types. In fact the ratios (taking our normal acting fuse as the reference) work out at one tenth of the time for our fast acting fuse and 200 times longer for our slow-blow type! A very big difference indeed and more than enough to 'release the smoke' in expensive semiconductors under fault conditions.

Temperature also has an effect on the current rating. As the ambient temperature becomes lower the amount of current required to "blow" a fuse becomes higher and this can make a considerable difference to the blowing times under surge conditions.

Ah, you may be thinking, let's use a fast acting fuse all the time and be safe. Regretfully this is not practical as many circuits have a high surge current when first switching on, or switching to change operating conditions.

(Continued on page 10)

Construction

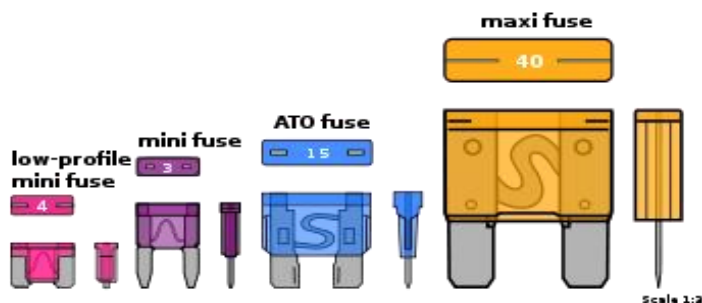
Let us now consider the construction of a typical cartridge fuse. First it has to have a body or barrel and this is normally made of glass or ceramic material. The barrel will have some form of termination at each end, usually brass or copper, which has been plated to prevent corrosion. The fuse element will be connected between the two end terminations and enclosed within the barrel.



It will consist of a single wire in the case of a quick acting fuse, or may be one or more wires arranged in a specific way for delay and anti-surge types. Sometimes a filler is used to modify the action of the fuse and this may be sand or quartz powder. This filler will absorb the energy of the arc when the current is interrupted.

Fuses are of course marked in some way as to type and ratings, normally on one or both of the end caps and in addition there may be an indication of one of the many standards that the particular fuse complies with, e.g. BS, SEMKO, etc. The size of fuse may vary but there are a number of standard sizes and the most common are the Standard metric which is 20mm long by 5mm diameter and the US standard of 1 x .25 inch diameter. Many other sizes are available ranging from 5mm long to over 200mm.

Particularly in automotive applications there are also 'blade' type fuses (*see graphic below*), and of course there are a number of other styles available for special purposes.



Fuse Characteristics

There are two main characteristics which will concern the Amateur and these are maximum continuous current rating and the surge rating of slow-blow types. The rupturing capacity of a fuse may also be important and for completeness is mentioned here. A high rupturing capacity fuse is capable of interrupting currents in the order of thousands of amperes. It would have a ceramic body and also contain an arc-quenching medium. Non-HRC fuses (more common in Amateur Radio equipment) do not have an arc-quenching medium and are only suitable for surge currents up to about 50 amps. With higher currents than this they would be very likely to explode when they blow.

Fusing Speed

As we have seen, a quick-acting fuse is designed to react both to short and long term overload conditions. They are very robust in construction and will withstand shocks and vibration. But they do tend to have a higher resistance and the voltage drop caused by this may be a problem in some applications. This higher resistance also means that more heat is produced and this must be effectively dissipated.

Time delay fuses will react to long term overload currents but will withstand transient surges without harm; several types are available. For example, one type has what looks like a spring inside the barrel and these will stand up to surges of around ten times the normal rating for 75 milliseconds. Another type has a "blob" in the middle of the fuse element and this type has a reduced surge capacity, typically ten times rated current but only for 25 milliseconds. Time delay types have a very low resistance and can be used in enclosed places as there is little self-generated heat but they are only available in the lower current ratings. Both the "spring" and the "blob" type are time delay fuses.

So far we have mentioned only the current rating of fuses, but they also have a maximum voltage rating. This voltage rating has no effect on the current rating but is important nevertheless. When a fuse "blows" an arc is developed between the two ends of the broken fuse element and, if the voltage across these ends is high enough, the arc will be maintained and the current will not be interrupted. This condition could result in considerable damage to the equipment. Arcs are readily produced in high voltage circuits or where inductive loads are being used and, in these conditions, the voltage rating of a fuse must not be exceeded. Fuses can be used at their current rating at all voltage levels up to their maximum. When it is known for certain that, although the circuit has a high voltage present, the power available is limited, it is possible to use a fuse at a higher voltage than that for which it is rated. This is common practice in domestic electronic equipment and quite safe. But, if in doubt, keep within the voltage ratings given by the manufacturers.

Mobile Fuse Applications

In one sentence: Place the fuse as close to the battery as possible in **both** the positive and negative line.

That's good advice because if for any reason the positive wire's insulation is damaged and the wire touches the chassis or engine (a hot manifold is a frequent cause of this problem) then it will blow the fuse if it is close to the battery but not if it is between the radio and the short.

It's also good practice to place a fuse in the negative line. Many hams think that is unnecessary because you will not cause a short if the negative wire touches the metal of

(Continued on page 12)



QRM ...from the Editor's shack

*Do you have a photo or bit of club news to share?
Something to sell or something you are looking for?
Email it to ve7ti@separs.net for inclusion in this column.*

OZ1MAL Update

As you may remember, some months back Kjeld VE7GP talked about OZ1MAL, a Danish sailor and his wife Kirsten, attempting to sail the North West passage this summer. He promised to keep you informed on the progress.

They are planning on leaving Cordova Alaska, where the boat has been in storage for the winter, during the first part of May.

Fred VE7IO and Kjeld have looked at different frequencies that may work, but there is no guaranty of that before they are on their way. At the moment Kim OZ1MAL has a high noise level where they currently are in Cordova, and they have limited Internet access. Kjeld has been in contact with Kim, and together with Fred they have some suggestions for contact frequencies that may be useable.

20 meters may be the best, around 14.200 - 14.290 @ 2200 hrs Zulu. To narrow that down, we could start with 14.225 - 14.240 @ 2200 hrs Zulu (3pm Local).

Fred and Kjeld also looked at 40 meters around 7.095 - 7.095 @ 0100 hrs Zulu (6pm Local).

Kim also has a WinLink address OZ1MAL@winlink.org. Don't expect him to have unlimited Internet access, and no attachments if you try.

Kjeld has also looked into a daily Maritime Mobile net on 20 meters ay 14.300 MHz . He was not able to make contact with the Net Control operator, but he was loud and clear at his QTH. Kjeld has not had an opportunity to listen again. The Maritime Mobile net runs 0300 - 0400 Zulu (20.00 - 21.00 Local) and he could hear about half of the stations checking in, despite a very limited antenna capacity at his QTH. Kjeld hopes that Fred will have better results. Fred found another 20 meter maritime net on the Internet on 14.313 at 0400 Zulu and Kjeld listened there, but heard nothing so it may have been a weekly net.

Friday Breakfast

A small but dedicated group has been meeting weekly on Friday mornings at 0830am at the ABC Restaurant at 74th and King George Blvd. The coffee is fresh, the meals are

tasty and the conversation covers all topics Amateur Radio related and a few that are not.

If you have the time, you are very welcome to join in.



The SARC 'Breakfast Club' regulars: L>R Rob, Norm, John S., Bill, John B., Jinty and Elizabeth.

Antenna Launch

On a recent rainy afternoon, two of our Elmers group John VE7XB and John VE7TI, ventured to Bhim Sen Nair's place to assist him in raising a dipole antenna. Bhim VA7BIM is a recent ham but he has embraced the hobby and he has become quite involved. Bhim is fortunate that he has several tall trees on his property, so it was decided that the simplest 'fix' was to use the club's compressed air tennis ball launcher to vault support ropes into place to raise the dipole ends.



'Net' Working Internet Resources and Tidbits for Hams

Titanic Remembered

Along with remembering the Titanic in this centennial year of its sinking, there is an elevated interest in early radio. The *IEEE Spectrum* discusses the [Titanic's role in radio reform](#) and Doug K1DG tips us to the [Communications Act of 1912](#) that led Amateur Radio into the "200 meters and down" wilderness (see Section 15) with all that came next. Imagine what a shock it must have been in those days to discover that the short waves were open during the day! If that paragraph had been absent, so would have modern ham radio. A BBC Titanic "[special broadcast](#)" converts the wireless telegraphy to voice, including losing the signal as the ship sunk. Tim K3LR recommends the portions from 4:43 - 23:00 and after 26:28 as the best parts of the nearly hour-long program..

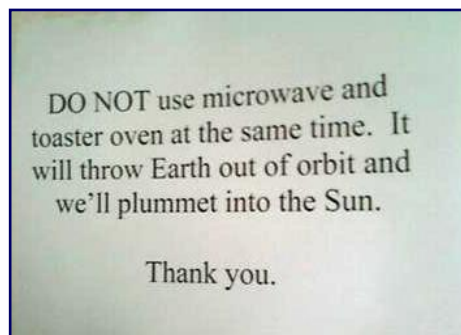
Does Anyone Repair Electronics Anymore?

"Does Anyone Repair Electronics Any More?" [Electronic Design](#) magazine answered that question in a blog entry of the same name by Lou Frenzel.

Hanging Your Certificates?

Contesters drill through walls quite a bit - hanging plaques and certificates, no doubt. Make cleanup a little easier with this idea for [using coffee filters](#) from Make magazine's online tip collection.

Signs Seen...



(Continued from page 10)

the vehicle. So why place a fuse in this line? In many installations the negative wire goes straight back to the negative terminal of the battery. If the battery cable develops resistance between the cable and the body of the vehicle by rust or corrosion or the wire itself corrodes to the point that it is not a good conductor this type of installation can cause problems. When the engine is being started a lot of current is being drawn from the battery and the wiring to the mobile radio is not designed to handle anywhere that much current. Simple Ohm's law will tell you that the maximum current will flow through the path of least resistance and if that path happens to be through the negative wire of the radio to the negative terminal of the battery then that is the where the most current will flow. Frequently the unit is not grounded well at the mounting bracket but the shield side of the coax makes a good ground by the antenna mount. In that case the current for the starter will attempt to flow through the coax shield to the coax connector on the radio then on to the negative wire to the battery. If that wire is not fused the coax shield will smoke. If the radio is grounded at the mount, the negative wire to the battery is not big enough to handle the load and it will smoke. Either way there is a fire danger.

This type of hookup is not recommended. If you do this and the fuse blows you may not know it is blown because the radio finds sufficient contact between the mounting bracket and/or the antenna ground to continue to operate. The resistance between the battery and the vehicle chassis does not have to be high enough that the vehicle will not start to cause this phenomenon. The antenna ground and the mounting bracket are not designed to be the negative source for the DC power of the radio and it will cause more problems than you can imagine. Tracing the source of these problems can drive you crazy. The suggestion is therefore to run the ground wire to the chassis of the vehicle. Use an eye terminal with one outer locking lock washer between the head of the screw and the lug and another between the lug and the chassis. Scrape the paint off the place where the lug will come in contact with the metal. Run the screw down tight but do not strip it out.

For a video on how to replace a blown automotive fuse <http://www.videojug.com/film/how-to-replace-a-blown-fuse>



News You Can Lose The Lighter Side of Amateur Radio

Rubber chicken flies into solar radiation storm



Last month, when the sun unleashed the most intense radiation storm since 2003, peppering satellites with charged particles and igniting strong

auroras around both poles, a group of high school students in Bishop, California, knew just what to do.

They launched a rubber chicken with a pair of badges to register radiation levels attached to her knitted spacesuit.

Watch NASA Camilla SDO - Chaos at 119,000 feet (March 10, 2012)

www.youtube.com/watch?feature=player_embedded&v=zwVqmeFBXOw

Read the full NASA story at

science.nasa.gov/science-news/science-at-nasa/2012/19apr_camilla/

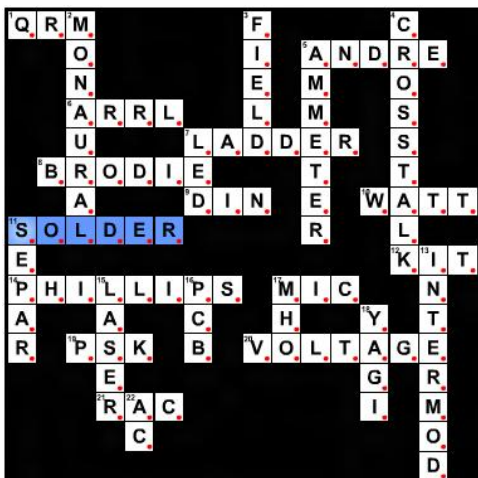


Amateur Radio Word Search

words appear forward, backward and diagonally

s	y	a	n	u	l	i	d	e	r	e	a	k	y	e	
n	a	r	o	e	m	a	n	n	e	t	n	a	r	n	g
e	e	n	r	e	a	i	y	p	o	w	e	r	i	w	a
f	s	t	e	e	c	x	e	c	t	c	t	l	o	v	s
m	u	i	m	n	w	a	n	t	n	e	r	r	u	c	s
t	i	s	l	p	t	o	r	a	p	e	s	a	i	a	e
s	r	c	e	e	r	c	t	r	d	h	u	f	m	m	m
e	e	a	r	e	n	s	e	d	l	p	a	q	p	p	h
t	a	p	n	o	i	t	a	l	u	d	o	m	e	e	o
n	c	u	n	s	p	l	k	e	n	w	o	o	d	r	f
o	t	p	e	n	c	h	i	e	i	r	p	c	a	e	f
c	a	r	m	a	s	e	o	t	y	o	e	s	n	k	s
s	n	o	i	t	a	c	i	n	u	m	m	o	c	a	e
x	c	c	s	o	r	s	y	v	e	e	t	u	e	e	t
i	e	e	p	t	c	o	n	n	e	c	t	o	r	p	a
f	o	x	h	u	n	t	s	u	r	r	e	y	t	s	e

Solution to last month's crossword





RAC News Radio Amateurs of Canada

Special Event station VX3W

2012-04-19

Members of the Manotick Amateur Radio Group will be operating special event station VX3W from Fort Wellington in Prescott, Ontario, on Saturday, May 19th from 10:00 EDT to 16:00 EDT (1400Z to 2000Z) to commemorate the 200th anniversary of the War of 1812.

Operating Modes: We will be operating on various HF bands, depending on the conditions. Local operators may be able to find us on simplex VHF and/or UHF. While most operations will be voice, we may also operate in digital modes. Check the VX3W board on our club's forums for more information

www.ve3rix.ca/forums/forumdisplay.php?f=43

If you make contact with VX3W, please send us a QSL card to the address below. We will send out cards in return and ask that you include a first class stamp for Canadian addresses or an IRC for any other country.

QSL Information:

*Manotick Amateur Radio Group
c/o 609-45 Holland Avenue
Ottawa, Ontario, Canada
K1Y 4S3*

Two new special event stations for WARD

2012-04-13

Two new special event stations join the celebration of the World Amateur Radio Day and the 87th Anniversary of IARU.

P487IARU by the Aruba Amateur Radio Club. They will be active starting today until the end of the month. QSL information on QRZ.com

SK87WARD by the Föreningen Sveriges Sändareamatörer. They will be active on the HF bands (CW SSB and PSK31) from 00z to 24z only on April 18th. QSL via buro or SM6JSM; probably also LoTW.

RAC Bulletin 2012-021E - Update on 60 Metres

2012-04-04

RAC has been pursuing channelized access to 60M since early 2010. Our request was for an allocation identical to the US allocation, with one additional unique Canadian channel, and with fewer restrictions (the US allocations were restricted to USB voice only, with power and

antenna restrictions). Amateurs will recall that one of the rationales for RAC requesting a 60M allocation was to enhance emergency communications including cross-border interoperability. IC responded by indicating that they were prepared to support access in synch with US amateur allocation and regulations. In late 2011, in response to an ARRL petition for change, the FCC issued a final Report and Order that, once it has been published in the Federal Register, will result in a change to the frequency of one of the channels and will enable the use of CW and data modes in addition to USB voice. These features had already been in the original RAC request. The FCC Report and Order has cleared the way for Canada to move ahead with finalizing its allocation to match the new US allocations, including the ability to use CW and data modes. This allocation, which will be on a secondary basis, requires a public consultation through the Canada Gazette, which RAC anticipates will occur in the second quarter of 2012.

It is important that Canadian Amateurs comment on the draft once released. RAC will continue to keep our members aware of the status of this important initiative.

An important offer has been made by IC with regards to 60M. Industry Canada is prepared to licence operators in channelized 60M operation pending the results of the consultation process. The licencing process will be managed out of IC's regional offices and is open to any Canadian amateur. The process requires a formal licence application, payment of a licence fee, and the use of a special call sign instead of the licensee's amateur call sign. RAC regards this as an important interim step allowing amateurs to get on the air in the 60M band as soon as possible and thanks IC for this initiative. RAC's objective, however, is to ensure that Canadian amateurs have the 60M allocation available to all amateurs as part of their amateur radio certification, i.e. without licence applications, licence fees or special call signs. RAC is cautiously optimistic that this will come about in the summer of 2012.

If you wish to obtain a temporary, paid license to operate on 60M, please contact your local Industry Canada Regional Office to complete the application form. The total fee depends upon the date of your application but in any case is less than \$100.

Bill Gade, VE4WO

Regulatory Affairs Officer - Radio Amateurs of Canada

My SteppIR Vertical John Brodie VA7XB

I've worked the world with this outstanding antenna using only 100 watts of power on 10, 12, 15, 17 and 20m. It does 6m also, but I have never been active on that band. I love the way it is tunable to any frequency within this range from a controller in the shack. With its low angle of radiation, a vertical is a good choice for DX, if you don't have the room for a tower and beam. With the correct cable, the radio will even tune the antenna automatically as you change frequency. The model I have is called a "Small IR" as distinct from the "Big IR" which also works on 30 and 40 m, but it is too large for my location. This is how the SteppIR system works:

Currently, most multi-band antennas use traps as a means of covering several frequency bands. By contrast, resonant antennas such as the SteppIR adjust to a specific length to operate optimally on a given frequency. The vertical antenna element consists of a spool of flat copper-beryllium tape conductor (.54" Wide x .008" Thick) mounted in the element housing unit. The copper-beryllium tape is perforated to allow a stepper motor to move it with a sprocket. Stepper motors are well known for their ability to index very accurately, thus giving very precise control of the element length. The copper-beryllium tape is driven out into a hollow fiberglass element support tube forming a vertical element of any desired length. The other key part of the antenna is the "ground" portion, called counterpoise which, in effect, are horizontal or drooping wires which project from the base.

The SteppIR vertical can be mounted either on the ground or elevated. I prefer the latter, mounted on a roof, because it gets it out of the way and, moreover, only a couple of counterpoise wires are needed for each band in contrast to the ground-mounted version which requires many ground wires to radiate effectively.



The roof bracket. The 1 1/2 inch diameter pole sits in a piece of PVC pipe

However, I have chosen to have four counterpoise wires for each band between 10 and 20m for the reason that it gives a more omni-directional pattern than with two. The antenna sits on top of an aluminum pole above a home-made saddle at the peak of the roof of my recently-purchased rancher. The saddle is constructed of channel and angle aluminum stock available from Metal Mart or most building supply stores.

The arrangement for connecting the counterpoise

wires to the SteppIR took some thought as all 20 (5 bands x 4 locations) counterpoise wires have to converge to a single "ground" connection on the SteppIR housing. These wires also serve as guy wires. My antenna is mounted 7 ft above the peak of the roof, sufficiently high to allow me to reach it when standing on the roof, and also to get the base at least 17 ft. away from the counterpoise attachment location at the gutters for the longest 1/4 wavelength wire (for 20 m operation) - all other counterpoise wires are shorter than this one.

I accomplished this by cutting a 1 1/2 inch round hole (for the mast) in a 6 inch square piece of 1/2 inch thick Lexan plastic and attached shackles to each corner. Five counterpoise wires connect to each corner by wire loops secured with cable clamps, and are soldered together.

Each of the five wires is cut to 1/4 wavelength, one end looped around the shackles and the other end connected to a home-made Lexan insulator using 1/8 inch parachute cord and tied to a termination at the roof line. Each counterpoise wire is separated at the lower end from the next to reduce inductive and capacitive coupling. Once the coax and control cable were hooked up, I measured an SWR less than 1.5 on all bands, except 20 m where the SWR was 1.7 flat across the band. I believe that the 20 m match can be improved by providing additional separation from the adjacent counterpoise wires. I intend to do this shortly.

Thanks to Brett VE7GM for his helpful assistance during the installation.



The SteppIR antenna with counterpoise wires fastened to clear Lexan and to the "ground" connection of the SteppIR.



The SteppIR Controller



SCARC

21st ANNUAL



Electronic Flea Market and Hamfest

ARRL Sanctioned Event



**** Stanwood Middle School ****

9405 271st St. NW, Stanwood, WA. 98292

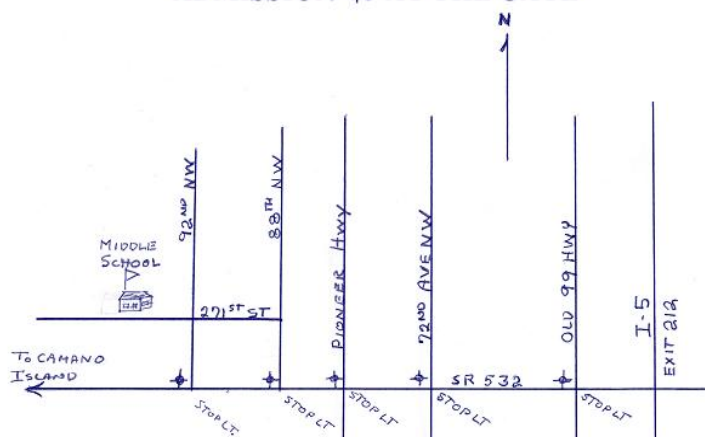
MAY 12, 2012

9 AM until 3 PM

*** LOTS TO SEE ***

ADMISSION \$5 AT THE GATE

- . PRIZES
- . VE TESTING
- . COMPUTER, HAM, ANTIQUE RADIOS
- . HEATED EXHIBITION HALL
- . LOTS OF FREE PARKING
- . SNACK BAR
- . SCARC CLUB INFO
- . AGE 12 & UNDER FREE
- . **EVERYONE WELCOME**



Talk-In 145.19- Skagit Repeater

For Info Call : KE7MHF, Jim Ruble at 360.629.4713 Email: ke7mhf@arrl.net
or N7KRE, Vic Henry at 360.387.7705 Email: nwecop@tgi.net

Next SARC Meeting

Wednesday, May 11, 2012

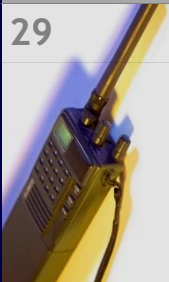
Presenters

Hui Yee - Kit demo

Gary Skett - Kit demo

Bill Gipps - Flex Software Defined Radio Demo

The SARC Calendar ...all about the Amateur Radio month ahead in Surrey

May 2012						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29 	30	1	2	3	4  SARC Friday Breakfast 8:30	5 Contest: ARI DX Contest—All Modes
6 Contest: ARI DX Contest—All Modes Maple Ridge ARC Swap Meet	7 Field Day Planning Meeting	8 SEPAR NET 7:30 SARC NET 8:00	9 SARC General Meeting 7pm	10	11 Weekly SARC Breakfast 8:30 ABC Restaurant 74th & King George Blvd.	12 SARC Foxhunt
13 Mothers' Day Treat Mom to a new HT!	14	15 SEPAR NET 7:30 SARC NET 8:00	16	17	18 Weekly SARC Breakfast 8:30 ABC Restaurant 74th & King George Blvd.	19 Dayton HamFest
20 Dayton HamFest	21 Victoria Day	22 SEPAR NET 7:30 SARC NET 8:00	23 SARC Exec Mtg. 7:00	24	25 Weekly SARC Breakfast 8:30 ABC Restaurant 74th & King George Blvd.	26 Contest: CQ WPX CW Contest Hyack Parade
27 Contest: CQ WPX CW Contest ARCC AGM	28	29 For details on all SARC events, go to ve7sar.net For details on all SEPARS events, go to separs.net	30	31	1	2

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>



QRT John Brodie VA7XB

Fox Hunt - May 12

Dust off those 2 m handheld radios, directional antennas and attenuators for SARC's annual Fox Hunt to be held at Crescent Park in South Surrey. This is the event where the "hunters" locate up to 5 hidden "foxes" (transmitters) within the allotted time of 90 minutes, and the rest of us get frustrated. Winding up the event is the barbeque to be held afterwards. Bring your spouse, children and grandchildren for the Fox Hunt and/or BBQ. Check out last month's Communicator for information on Fox Hunting and constructing your own equipment. If you don't wish to participate but simply see how it's done, that's OK too as we can team you up with a more experienced "hunter". However, it is essential that you notify Anton VE7SSD of your attendance so that he can properly plan: jamesadf@shaw.ca.

Seaside Bus Trip - June 1/2

A few of us have been travelling to Seaside, Oregon every year in early June to take in the Sea-Pac Hamfest. It's a great event featuring technical seminars, the flea market and lots of vendor displays and sales. The great shopping and beach near the Sea-Pac convention centre are attractions available to family members who aren't hams. To reduce the cost and make the travel more feasible for members, Susan VE7IIE has arranged a bus trip to Seaside, leaving on the morning of Friday, June 1st and getting us home early Sunday morning. If you plan to attend, don't delay as bus seating is limited. Check out full details at www.ve7sar.net and make payment to confirm your reservation.

Annual General Meeting June 13

At the AGM, we will be looking to fill a complete slate of 4 Executive (President, Vice President, Secretary and Treasurer) and up to 6 Directors. Please consider accepting a nomination for one of these positions to put some new blood into the group that gives direction to the club's activities over

the next year. You do not have to have a lot of experience to do this - the main requirement is that you have enthusiasm for the hobby and be willing to give some of your time. It's also a way to gain experience by working with the seasoned members. If you are approached to run for a position, please give it serious consideration before you say "no".

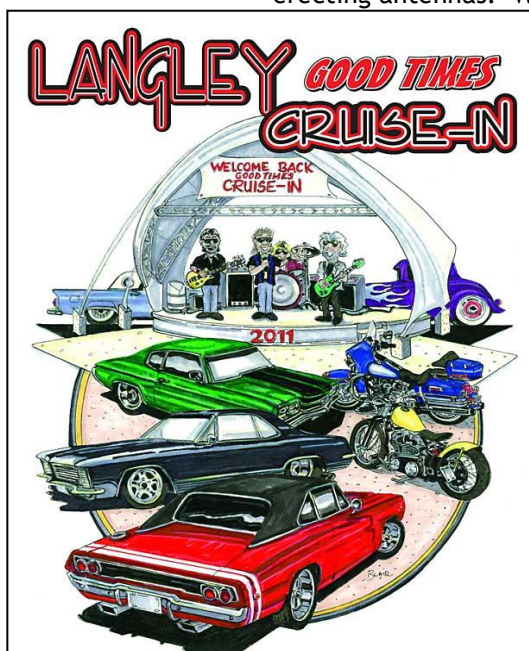
Field Day - June 24, 25

This is the big event of the year for SARC and other clubs throughout North America. Our plan is to return to Grandview Heights School Grounds, which is considered to be one of the best sites we have had in recent years, with its central location, high elevation, tall trees and good parking. Although Langley Amateur Radio Association is the host for this year's FD, the duties are shared with SARC, and we will be needing volunteers to assist with the many tasks. The Operator Skills Training group will be there to raise the points score using the techniques they have been practicing in a variety of contests since last Fall. We will have our two big towers and beams, some high dipoles and other antennas, the great operating tent, and plenty of room for campers and motor homes. Whether you are into SSB, CW or RTTY, there will be some action for all these skills. Langley has confirmed the donation of portable toilets and the use of a man-lift for erecting antennas. We also hope to have LARA's satellite

station. We are giving some thought to how best to set up the GOTA ("get on the air") station for beginners.

Raffle - Summer

In lieu of a swap meet this year, our main fund raising event will be a raffle, with prize draw at the Langley "Cruise-in" in September. Prizes have not yet been finalized, but we are looking at a weekend for two at Harrison Hot Springs Resort as the first prize. We are hoping that members will donate other items to supplement purchased prizes. Shortly, you will be asked to take one or more books of tickets and sell them over the summer. In order to make this fund-raiser successful, we will need to sell nearly all of the tickets that we are allowed under Lottery rules.



Remember that our partner club, LARA, has invited us to join them in selling raffle tickets at the "Cruise-in" event in Langley to be held in September. LARA has applied to have a table at the "Cruise-in" which attracts thousands of visitors, providing an ideal opportunity for fund raising.

More details to follow.